

EXPERIENCES AND VIEWS OF DOMESTIC SUMMER TRAVELERS DURING THE COVID-19 PANDEMIC: FINDINGS FROM A NATIONAL SURVEY

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Domestic travel creates a serious risk of spreading COVID-19, including novel strains of the virus. Motivating potential travelers to take precautions is critical, especially for those at higher risk for severe illness. To provide an evidence base for communication efforts, we examined the experiences and views of travelers during the summer of 2020 through a telephone survey of 1,968 US adults, conducted in English and Spanish, July 2 through July 16, 2020. The survey found that more than one-quarter (28%) of adults had traveled domestically in the prior 30 days, most commonly for “vacation” (43%), and less than half wore masks (46%) or practiced social distancing (47%) “all of the time.” Although high-risk adults were significantly less likely to travel than non-high-risk adults (23% vs 31%; $P < .001$), they were no more likely to take precautions. Many travelers did not wear a mask or practice social distancing because they felt such actions were unnecessary (eg, they were outside or with friends and family). Although a substantial share of travelers (43% to 53%) trusted public health agencies “a great deal” for information about reducing risks while traveling, more travelers (73%) trusted their own healthcare providers. Findings suggest that outreach may be improved by partnering

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with providers to emphasize the benefits of layering precautions and provide targeted education to high-risk individuals. Messages that are empathetic to the need to reduce stress and convey how precautions can protect loved ones may be particularly resonant after more than a year of pandemic-related restrictions.

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INTRODUCTION

DOMESTIC TRAVEL creates a serious risk for exposure to COVID-19, including novel variants, and introduces the possibility of spreading the virus across locations.^{1,2} Infected travelers can spread the virus into the communities they visit, and uninfected travelers are at risk of becoming infected during their trip. Those who become infected while traveling can then spread the disease in their household and community when they return home. Travel-related exposure to COVID-19 is especially concerning for older adults and those with certain chronic conditions who are at higher risk for severe illness.³ Until vaccine protection against novel variants is well understood and vaccine coverage rates increase, these adults remain vulnerable to adverse health outcomes.

To reduce the risk of virus transmission related to travel, masking and social distancing are important. These protective behaviors are particularly relevant in light of inconsistent state travel regulations. Many states established restrictions and quarantining policies for travelers during the summer of 2020, such as Hawaii, Kansas, and Maine.⁴ Rules varied widely between states, however, with some states such as South Dakota even encouraging travel.⁵ Moreover, many policies have since changed or been rescinded altogether, and where they remain, enforcement is unclear.⁶⁻⁸ Given the diversity of policies across states and their reliance on voluntary compliance with testing and quarantine requirements, individual preventive behaviors remain critical to reducing the spread of COVID-19 while traveling. These precautions—namely, wearing a mask and staying at least 6 feet from anyone outside of one's household in public settings—are imperative for everyone, but especially unvaccinated individuals and those at higher risk of severe illness from COVID-19.⁹

Understanding travel-related behavior during the COVID-19 pandemic is essential for developing effective communications that motivate adults to adopt protective behaviors while traveling. This includes understanding motivations for and concerns about travel, how often people practice masking and social distancing while traveling, and barriers to taking precautions. Limited evidence is available, however, particularly in peer-reviewed literature. Media polls and reports from federal agencies about travel primarily describe modes of travel or broad descriptions of travel trends rather than people's motivations or reasons for traveling.¹⁰⁻¹⁴ No polls or reports that we could find

disaggregated travelers by risk status. Further, while there is evidence that people wear masks and practice social distancing inconsistently in their home communities, there is no parallel data on whether people take these precautions while traveling.^{15,16}

In this study, we aim to fill gaps in the scientific understanding of domestic travel-related behaviors during the COVID-19 pandemic by using data from a nationally representative survey of adults in the United States who traveled during the summer of 2020. We examine the demographic profile of travelers and key features of their trips. We also describe their overall motivations and attitudes, key precautions they took while on their most recent trip, reasons for not adopting these behaviors, and whom they trusted for information about staying safe while traveling. Finally, we examine these issues among those at higher risk for severe illness from COVID-19.

METHODS

Data come from a survey fielded in English and Spanish among a nationally representative sample of 1,968 adults ages 18 and older in the United States from July 2 through July 16, 2020. The sample included 646 "travelers" (those who had traveled at least once in the past 30 days), 318 "planners" (those who had not yet traveled but were "very" or "somewhat" likely to do so during the summer), and 1,004 "nontravelers" (those who had not traveled in the past 30 days and were not likely to during the summer). "Travel" was defined as taking a trip, of any duration, "that is different from your everyday activities, away from your local community or regular commute."¹⁷

The survey used a random-digit dial design to contact landlines ($n = 455$) and cell phones ($n = 1,513$). Researchers at the Harvard T.H. Chan School of Public Health (HSPH) designed and analyzed the survey as part of technical assistance to inform rapid response communication efforts by state and local public health departments through the Association of State and Territorial Health Officials and the National Public Health Information Coalition. Staff at the Association of State and Territorial Health, the National Public Health Information Coalition, and the US Centers for Disease Control and Prevention (CDC) provided technical input on questionnaire content and interpretation of findings. SSRS oversaw field operations and handled data management. Because the survey aimed to

provide public health agencies with key situational awareness during a public health crisis, the study was not considered human subjects research by the HSPH Office of Regulatory Affairs and Research Compliance. This activity was checked by CDC and was conducted consistent with applicable federal law and CDC policy (eg, 45 CFR §46,¹⁸ 21 CFR §56,¹⁹ 42 USC §241(d),²⁰ 5 USC §552a,²¹ 44 USC §3501²²).

To ensure timely delivery of findings to public health agencies, the survey was designed to minimize turnaround time for data collection. Mirroring several past surveys designed for similar purposes, the approach included using a phone-only mode, rather than multimode design, and kept the field time to 2 weeks.²³⁻²⁵ Restricting data collection to a limited window reduces lag time on results, recall problems for respondents, and the effect of media coverage on responses.²⁶ Protocols within the data collection window followed best practices promoted by the American Association for Public Opinion Research and included quality control efforts such as calling over a range of different days and times of day, and multiple contact attempts (up to 4) to reach those initially unavailable.²⁷

The overall response rate was 9% (cell phone: 7%; landline: 14%), calculated using American Association for Public Opinion Research's Response Rate 3 formula.²⁸ Although short-turnaround surveys like this one often have lower response rates, research suggests that the resulting data are comparable to longer-term, higher-response surveys when reweighted to key population parameters.²⁹⁻³¹ Data were weighted with respect to 3 overarching features to ensure the survey was representative of adults nationwide. First, data were weighted to account for the relative distribution of cell phones and landlines in the United States. Second, they were weighted to adjust for sampling techniques used to ensure a sufficient number of travelers, including Black and Hispanic travelers (see Appendix, www.liebertpub.com/doi/suppl/10.1089/hs.2020.0212). Third, data were weighted to match the following known population parameters: gender, age, race/ethnicity, education, marital status, metropolitan status, and US Census region. Demographic characteristics and phone usage rates were obtained from the US Census Current Population Survey and the National Health Interview Survey. The final weighted sample deviated little from population parameters, with no differences greater than 1.6 percentage points.

Questionnaire and Measures

The questionnaire, including question wording, response options, and flow, was informed by previous studies about travelers' views of health risks during disease outbreaks.³²⁻³⁴ It was also developed with input from state and local health officials about current COVID-19 concerns. The questionnaire was pretested using live telephone interviews among 26 respondents from a variety of demographic backgrounds. Based on respondent reactions, minor

revisions were made to improve the clarity of questions and response categories. Question wording is presented in the tables with edits for length. Full question wording and relevant routing is available in the Appendix.

The survey asked closed-ended questions about travel within the past 30 days, and the most recent trip within that time frame if respondents traveled more than once. This analysis focuses on characteristics of respondents' most recent trip (eg, frequency, duration, destination, group size) and travel motivations, level of concern about coronavirus transmission during travel, perceptions of the pandemic response efforts, adherence to preventive behaviors (ie, mask wearing and social distancing), and trust in sources of information about COVID-19. The analysis also included 2 open-ended questions about reasons for nonadherence to mask wearing and social distancing. We worked in 2 stages to classify responses to open-ended questions. First, 2 team members reviewed the verbatim text of responses and developed a code list to describe major themes, with refinements after coding a small sample of data. Second, they independently coded all verbatim text. Any verbatim text without exact coding agreement was resolved by consensus. Responses given by few respondents were collapsed into the category "other."

The survey also collected data on demographic information related to risk for severe illness from COVID-19, including age and having a relevant health condition, defined as "a serious heart, lung, liver, or kidney condition; diabetes; severe obesity; or decreased immunity." This language was adapted from the CDC website at the time of survey development, which described the conditions that put one at risk for serious illness.³ For the purpose of this study, those who said they had been "told by a doctor or health professional" that they had one of the health conditions previously listed were defined as having a "serious health condition." "High-risk" individuals were defined as those who had a serious health condition or were aged 65 years or older.

Statistical Analyses

We began by calculating the prevalence of recent travel in the total population and examining demographic characteristics of travelers, planners, and nontravelers. We then calculated the proportion of travelers who reported different trip characteristics, attitudes, and protective behaviors while traveling, stratified by risk status. We compared the responses of high-risk travelers with non-high-risk travelers using 2-tailed *t* tests. To control for possible confounding, we also ran ordered logistic regression models for each protective behavior with risk status, gender, education, annual household income, race and ethnicity, area of residence, and purpose of travel added as covariates.

The design effect was 1.3 for the full sample and 1.4 for travelers. All analyses used weighted data and incorporated the design effect. Results were considered statistically

significant if $P < .05$; all results are indicated in the tables and Appendix. Analyses were performed using the statistical software Stata version 16.1 (StataCorp LLC, College Station, TX).

RESULTS

More than one-quarter (28%) of US adults said they had traveled in the past 30 days (95% CI, 26 to 30; data not shown in tables). The Supplemental Table (www.liebertpub.com/doi/suppl/10.1089/hs.2020.0212) indicates that the profile of “travelers” was different than that of “planners” and “nontravelers” across several demographic characteristics. Travelers were more likely to be male (58%) than planners and nontravelers (47% and 44%; $P < .01$); live in a household that earns at least \$75,000 per year (45%) compared with planners and nontravelers (36% and 26%; $P < .05$); and identify as non-Hispanic White (73%)

compared with planners and nontravelers (61% and 57%; $P < .001$). Travelers were also more likely than nontravelers to be aged 18 to 29 years (25% vs 17%; $P = .001$), not have a “serious health condition” (80% vs 73%; $P = .007$), and thus to be considered “not high risk” (71% vs 60%; $P < .001$).

Trip Characteristics. Table 1 shows that the vast majority (89%) of travelers primarily used private vehicles, such as cars and trucks, during their most recent trip. Half (50%) reported that their trip took them out of state, and two-thirds (66%) said they spent at least 1 night away. Only 8% of travelers journeyed solo, while the remainder traveled “in a group” (that is, they met up with at least 1 other person at their destination or journeyed with at least 1 other person). Among those who traveled in a group, 59% did so with people from other households.

Travel Purpose, Motivations, Concerns, and Perceptions of Coronavirus Response. Table 2 shows that three-fourths of travelers said the purpose of their most recent trip

Table 1. Characteristics of Travelers’ Most Recent Trip, by Respondent’s Risk Type

| Response | Weighted % (95% CI) ^a | | |
|--|----------------------------------|---|--------------------------------------|
| | All Travelers (N = 646) | High-Risk ^b Travelers (n = 222) | Non-High-Risk Travelers (n = 424) |
| Travel frequency: <i>In the past 30 days, how many times, if ever, have you traveled within the United States?</i> | | | |
| 1 time | 51 (47-56) | 53 (46-61) | 51 (45-56) |
| 2 to 5 times | 36 (32-40) | 37 (29-44) | 36 (31-41) |
| 6 or more times | 13 (10-16) | 10 (6-16) | 14 (10-18) |
| Primary travel mode: <i>Thinking about your most recent trip, did you travel to your destination primarily by car, plane, train, bus, or something else?</i> | | | |
| Private vehicle (car, truck, motorcycle, or RV) | 89 (86-92) | 94 (90-97) ^c | 88 (83-91) |
| Plane | 7 (5-10) | 4 (2-8) | 9 (6-12) ^c |
| Train | 2 (1-3) | 1 (0.4-4) | 2 (1-4) |
| Bus | 1 (0.3-2) | 0.4 (0.1-3) | 1 (0.4-3) |
| Travel destination: <i>Was your destination within your state or in another state?</i> | | | |
| Within your state | 50 (45-54) | 53 (46-61) | 48 (43-54) |
| In another state | 50 (46-55) | 47 (39-54) | 52 (46-57) |
| Trip duration: <i>Was this a day trip or did you spend at least one night away?</i> | | | |
| Day trip | 34 (30-39) | 42 (34-50) ^c | 31 (26-37) |
| Spent at least 1 night away | 66 (61-70) | 58 (50-66) | 69 (63-74) ^c |
| Travel group size: <i>How many other people, if any, were on this trip with you?^d</i> | | | |
| Solo traveler | 8 (6-11) | 11 (7-17) | 7 (5-11) |
| 2 to 4 people | 50 (46-55) | 56 (48-63) | 48 (43-54) |
| 5 to 10 people | 30 (26-34) | 27 (20-34) | 31 (26-36) |
| More than 10 people | 12 (9-15) | 7 (4-12) | 14 (10-18) ^c |
| Merging households: <i>Did your travel group include people from other households, or only people from your own household?</i> | | | |
| Included people from other households | 59 (54-63) | 59 (51-66) | 58 (53-64) |
| Did not include people from other households ^e | 41 (36-45) | 40 (32-47) | 41 (36-47) |

^aWeighted percentages reflect the use of survey weights to match known population parameters for the adult US population. Percentages may not sum to 100% due to rounding, refusals, and responses of “don’t know” that are included in the total sample size, but not reported here.

^bHigh risk indicates respondents at higher risk of severe illness from COVID-19 due to being aged 65 or older or having a serious heart, lung, liver, or kidney condition; diabetes; severe obesity; or decreased immunity.

^c $P < .05$.

^dTravel group size indicates the number of people on the trip, including the respondent. Wording abbreviated for length. Full verbatim question wording is available in the Appendix.

^eIncludes solo travelers and those who traveled in a group with others from only their own household.

Table 2. Purpose of and Motivations for Travel, Concerns About Transmission, and Perceptions of Coronavirus Response Among Travelers, by Risk Type

| Response | Weighted % (95% CI) ^a | | |
|---|----------------------------------|--|---------------------------------------|
| | All Travelers (N=646) | High-Risk ^b Travelers (n=222) | Non-High-Risk Travelers (n=424) |
| Purpose of travel: <i>What type of trip would you say this was? Would you say it was primarily for vacation or recreation, business, visiting friends or relatives, moving, or some other type?</i> ^c | | | |
| Vacation or recreation (or holiday) | 43 (38-47) | 35 (28-43) | 46 (40-52) ^c |
| Visiting friends or relatives to socialize with them generally | 23 (20-27) | 26 (20-34) | 22 (18-27) |
| Business (or professional reasons) | 13 (10-16) | 11 (7-17) | 13 (10-18) |
| To attend a funeral, wedding, birthday, reunion, graduation, or other specific event | 6 (5-9) | 4 (2-8) | 7 (5-11) |
| Visiting friends or relatives to care for them | 3 (2-5) | 4 (2-9) | 2 (1-4) |
| Health reasons | 3 (2-5) | 5 (3-9) ^c | 2 (1-5) |
| Moving | 3 (2-4) | 3 (1-7) | 3 (2-5) |
| Shopping | 3 (2-5) | 6 (3-10) | 2 (1-4) |
| Motivations for travel: <i>Was each of the following a major reason, a minor reason, or not a reason at all that you took a trip at this particular time? (Percent saying it was a "major reason" displayed below)</i> ^d | | | |
| You thought the trip would help reduce stress for you or others | 46 (42-51) | 47 (40-55) | 46 (40-51) |
| You wanted to go to a destination with fewer people around | 23 (19-27) | 27 (21-35) | 21 (17-26) |
| The place or places you wanted to visit were no longer closed or restricted | 20 (17-24) | 23 (17-30) | 19 (15-24) |
| Advisories to stay at home or avoid travel were lifted | 19 (16-23) | 20 (15-27) | 19 (15-23) |
| The number of coronavirus cases seemed likely to rise in the future | 15 (12-18) | 20 (14-27) | 13 (9-16) |
| The number of coronavirus cases seemed to be going down | 14 (11-17) | 11 (7-17) | 15 (11-19) |
| You think concern about coronavirus has gone too far | 13 (11-17) | 19 (14-26) ^c | 11 (8-15) |
| There were good prices available for travel or lodging | 8 (5-11) | 8 (4-14) | 8 (5-11) |
| Concerns about virus transmission: | | | |
| <i>Overall, how concerned were you about you or someone in your travel group getting infected with coronavirus during your trip?</i> | | | |
| Very concerned | 15 (12-19) | 18 (13-24) | 14 (11-19) |
| Somewhat concerned | 25 (21-29) | 23 (17-29) | 26 (21-31) |
| Not very concerned | 29 (25-34) | 25 (19-32) | 31 (26-37) |
| Not at all concerned | 30 (26-35) | 35 (27-43) | 29 (24-34) |
| <i>Overall, how concerned were you about you or anyone in your travel group spreading coronavirus to other people during your trip?</i> | | | |
| Very concerned | 10 (7-13) | 10 (6-15) | 10 (7-13) |
| Somewhat concerned | 16 (13-20) | 11 (7-17) | 19 (15-23) ^c |
| Not very concerned | 28 (24-32) | 26 (20-33) | 28 (24-34) |
| Not at all concerned | 46 (41-50) | 54 (46-61) ^c | 43 (37-48) |
| Perceptions of coronavirus response: | | | |
| <i>In general, do you think the measures taken by federal public health officials to slow the spread of coronavirus have been appropriate, have they gone too far, or have they not gone far enough?</i> | | | |
| Believe measures have "gone too far" | 21 (17-25) | 21 (16-29) | 20 (16-25) |
| Believe measures have "been appropriate" or "not gone far enough" | 77 (72-80) | 74 (67-81) | 77 (72-82) |
| <i>In general, do you think the measures taken by state public health officials to slow the spread of coronavirus have been appropriate, have they gone too far, or have they not gone far enough?</i> | | | |
| Believe measures have "gone too far" | 23 (19-27) | 22 (16-30) | 23 (19-29) |
| Believe measures have "been appropriate" or "not gone far enough" | 75 (70-79) | 75 (67-81) | 75 (69-79) |

^aWeighted percentages reflect the use of survey weights to match known population parameters for the adult US population. Percentages may not sum to 100% due to rounding, refusals, and responses of "don't know" that are included in the total sample size, but not reported here.

^bHigh risk indicates respondents at higher risk of severe illness from COVID-19 due to being aged 65 years or older or having a serious heart, lung, liver, or kidney condition; diabetes; severe obesity; or decreased immunity.

^c*P* < .05.

^dWording abbreviated for length. Full verbatim question wording is available in the Appendix.

was social—they traveled for vacation (43%), to socialize with friends or relatives (23%), to attend an event (6%), or to go shopping (3%). Fewer travelers said they traveled for nonsocial purposes, such as business (13%), caring for friends or relatives (3%), or moving (3%). Nearly half (46%) cited stress reduction as a major reason they traveled when they did, followed by wanting to go to a destination with fewer people around (23%). Relatively few people (13%) said they were motivated to travel because they believed concern about the virus had gone too far. Most people were “not at all” or “not very” concerned about getting the virus (59%) or spreading the virus (74%) during their trip, while a relatively small fraction said they were “very concerned” about getting the virus (15%) or spreading the virus (10%). Most recent travelers said they did not believe that federal or state public health agencies had “gone too far” in their COVID-19 response (77% and 75%, respectively).

Protective Behaviors and Reasoning. Table 3 shows that less than half (46%) of travelers reported wearing a mask or face covering “all of the time” while around people other than their travel group, and 22% said they did this “most of the time.” Those who did not wear a mask “all of the time” cited reasons related to logistical challenges such as difficulty breathing, eating, or drinking (29%); thinking the situation was safe without a mask, since they were outside or did not believe anyone was infected, for example, (25%); or taking other precautions like social distancing instead (20%).

Similar rates of adherence were reported for social distancing measures. Less than half (47%) of travelers said they practiced social distancing “all of the time” while around people other than their travel group, and 30% said they did this “most of the time.” Those who did not practice social distancing “all of the time” commonly cited reasons related to logistical challenges such as lack of physical space or the encroachment of others (59%). Less often, they cited social norms and expectations such as not wanting to make others uncomfortable or being around family or friends (21%), or thinking the situation was safe because they were outside or did not believe anyone was infected, for example (12%).

Trusted Sources of Travel Information. Table 4 shows that nearly three-fourths of travelers (73%) said they trust their doctor or nurse “a great deal” for accurate information about how to reduce the risk of getting or spreading COVID-19 while traveling. Public health institutions were the next-most commonly trusted sources of information, with more than half (53%) of travelers saying they trust the CDC “a great deal,” and about 2 in 5 saying the same of state and local public health agencies (44% and 43%, respectively).

Travel Behaviors Among High-Risk Adults. High-risk adults were less likely to have traveled than non-high-risk adults, overall (23% [95% CI, 20 to 26] vs 31%, [95% CI, 28 to 34]; $P < .001$; data not shown in tables). However, as Table 1 indicates, high-risk travelers were just as likely as

non-high-risk travelers to have traveled in a group that included people from other households (59% vs 58%).

Table 2 indicates that high-risk travelers were no more likely than their non-high-risk counterparts to say they were “very concerned” about getting infected while traveling (18% vs 14%), and they were significantly more likely to say that a major reason for their most recent trip was because they thought concern about the virus had “gone too far” (19% vs 11%; $P = .017$).

Table 3 shows that high-risk travelers were no more likely to engage in protective behaviors while traveling than their non-high-risk counterparts. Less than half of travelers at high risk for severe illness from COVID-19 wore a mask (48%) or practiced social distancing (47%) “all of the time” around people outside of their travel group—similar to non-high-risk travelers (45% and 46%, respectively). These results remained robust, even after adjusting for possible confounding using ordered logistic regression models (see Appendix).

Table 4 shows that healthcare professionals were the most trusted source of travel-related COVID-19 information for both high-risk (67%) and non-high-risk (75%) travelers. However, high-risk travelers were more likely to say they trusted friends and family “a great deal” than their non-high-risk counterparts (32% vs 20%; $P = .005$) and less likely to say they had a “great deal” of trust in the CDC (44% vs 56%; $P = .01$), state public health agencies (35% vs 48%; $P = .006$), and local public health agencies (35% vs 47%; $P = .009$).

DISCUSSION

This is the first, and to our knowledge only, nationally representative survey described in peer-reviewed literature that focuses on the attitudes and behaviors of travelers during the COVID-19 pandemic. The data show that many adults in the United States, including those at higher risk for severe illness from COVID-19, traveled during the summer of 2020 and did so in ways that could increase virus transmission, such as mixing households during the journey and at their destination. After more than a year of pandemic-related restrictions, data from the Transportation Safety Administration indicate that domestic travel may be far greater in 2021.³⁵ Motivating adults to take precautions while traveling will be an important factor of controlling transmission, as novel coronavirus variants spread nationwide and vaccine coverage rates remain below the level needed for herd immunity. This study provides several findings that can guide public communication and outreach strategies aimed at those planning to travel during the summer of 2021 and beyond.

First, few travelers were very concerned about virus transmission during their trip and many inconsistently engaged in masking and social distancing. These findings align with prior research about travel during infectious

Table 3. Rates of Adherence to and Barriers to Adoption of Key Virus Transmission Precautions Among Travelers, by Risk Type

| Response | Weighted % (95% CI) ^a | | |
|---|----------------------------------|---|--|
| | All Travelers (N= 646) | High-Risk ^b Travelers (n= 222) | Non-High-Risk Travelers (n= 424) |
| Wearing a mask or face covering: | | | |
| <i>Thinking about the times when you were around other people (other than your travel group), did you wear a mask or face covering all the time, most of the time, about half the time, not very often, or never? (n=599)</i> | | | |
| All of the time | 46 (41-51) | 48 (40-56) | 45 (39-51) |
| Most of the time | 22 (18-26) | 20 (14-27) | 23 (19-28) |
| About half the time | 7 (5-10) | 7 (3-13) | 7 (5-11) |
| Not very often | 8 (6-11) | 5 (2-10) | 9 (6-13) |
| Never | 16 (13-20) | 20 (14-28) | 15 (11-19) |
| N/A – I was never around other people (n=47) | 8 (6-11) | 10 (7-16) | 7 (5-11) |
| <i>There are lots of reasons people may not wear a mask or face covering all the time around other people during a trip. What are the reasons you did not do this all the time? (Among those who were around others and did not wear a mask all of the time, n=294)</i> | | | |
| Logistical difficulties with masks ^c | 29 (23-35) | 32 (22-44) | 27 (21-35) |
| Perceptions that the situation was safe ^d | 25 (20-31) | 23 (15-34) | 26 (19-34) |
| Taking other precautions ^e | 20 (16-26) | 15 (9-25) | 22 (17-30) |
| Doubts or defiance related to masking or COVID-19 ^f | 18 (13-24) | 19 (11-30) | 17 (12-25) |
| Social norms and expectations ^g | 14 (10-19) | 15 (8-26) | 13 (9-20) |
| Forgetting or thinking they were not required ^h | 11 (8-16) | 20 (12-32) ⁱ | 8 (5-14) |
| Social distancing: | | | |
| <i>When you were around other people (other than your travel group), did you social distance—that is stay 6 feet away from them all the time, most of the time, about half the time, not very often, or never? (n=613)</i> | | | |
| All of the time | 47 (42-51) | 47 (39-56) | 46 (41-52) |
| Most of the time | 30 (26-34) | 33 (26-41) | 29 (24-34) |
| About half the time | 11 (8-14) | 9 (5-15) | 12 (8-16) |
| Not very often | 7 (5-10) | 6 (3-12) | 7 (5-11) |
| Never | 5 (3-8) | 4 (2-9) | 5 (3-9) |
| N/A – I was never around other people (n=33) | 6 (4-8) | 7 (4-13) | 5 (3-8) |
| <i>There are lots of reasons people may not social distance all the time around other people during a trip. What are the reasons you did not do this all the time? (Among those who were around others and did not social distance all of the time, n=310)</i> | | | |
| Logistical difficulties with social distancing ^c | 59 (52-65) | 51 (40-62) | 61 (53-69) |
| Social norms and expectations ^g | 21 (16-27) | 29 (19-40) | 19 (13-26) |
| Perceptions that the situation was safe ^d | 12 (8-17) | 12 (7-21) | 12 (8-19) |
| Doubts or defiance related to social distancing or COVID-19 ^f | 8 (5-12) | 6 (3-15) | 8 (5-14) |
| Taking other precautions ^e | 6 (4-10) | 3 (1-9) | 7 (4-13) |
| Forgetting or thinking it was not required ^h | 4 (2-8) | 3 (1-10) | 4 (2-9) |

^aWeighted percentages reflect the use of survey weights to match known population parameters for the adult US population. Percentages may not sum to 100% due to rounding, refusals, and responses of “don’t know” that are included in the total sample size, but not reported here.

^bHigh risk indicates respondents at higher risk of severe illness from COVID-19 due to being aged 65 years or older or having a serious heart, lung, liver, or kidney condition; diabetes; severe obesity; or decreased immunity.

^cLogistical difficulties include responses such as: (1) face coverings are uncomfortable; (2) face coverings make it difficult to breathe, speak, be heard, eat, or drink; (3) there was not enough physical space to maintain distance; and (4) other people got closer to me even when I tried to maintain distance.

^dPerceptions of safety included responses such as: (1) I did not think I was infected, (2) I was outside, and (3) I did not think anyone I was around was infected.

^eTaking other precautions included responses such as: (1) I social distanced instead of masking and (2) I wore a face covering or mask instead of social distancing.

^fDoubts or defiance included responses such as: (1) I did not think coronavirus would be that serious for me even if I got infected and (2) I don’t think face coverings or social distancing are effective in protecting against the spread of coronavirus.

^gSocial norms and expectations included responses such as: (1) No one else was doing this, (2) I was worried others would be afraid of me or treat me differently, and (3) I wanted to hug or greet people.

^hForgetting or thinking it was not required included responses such as: (1) I forgot to bring a mask/put my mask on and (2) I did not think it was required or recommended in the place(s) I was traveling.

ⁱP<.05.

Table 4. Sources that Travelers Trusted “a Great Deal” for Coronavirus Prevention Information While Traveling, by Risk Type

| Response | Weighted % (95% CI) ^a | | |
|---|----------------------------------|---|--|
| | All Travelers (N= 646) | High-Risk ^b Travelers (n= 222) | Non-High-Risk Travelers (n= 424) |
| <i>How much would you trust each of the following sources to provide accurate information about what you can do to reduce the risk of getting or spreading coronavirus while traveling? (Percentage saying “a great deal” displayed below).</i> | | | |
| Your doctor or nurse | 73 (69-77) | 67 (59-74) | 75 (70-80) |
| US Centers for Disease Control and Prevention, or the CDC | 53 (48-57) | 44 (36-52) | 56 (51-62) ^c |
| Your state public health agency | 44 (39-48) | 35 (28-42) | 48 (42-53) ^c |
| Your local public health agency | 43 (39-48) | 35 (28-42) | 47 (41-53) ^c |
| Your state elected officials like the governor | 33 (29-37) | 31 (24-38) | 34 (29-39) |
| Friends and family | 23 (20-27) | 32 (25-40) ^c | 20 (16-25) |
| Your local elected officials like the mayor | 21 (18-25) | 21 (15-28) | 21 (17-26) |
| Leaders in your church, synagogue, mosque, or other religious organization | 18 (15-22) | 24 (18-32) ^d | 16 (12-20) |
| Health websites, such as WebMD | 17 (14-21) | 15 (11-21) | 18 (14-23) |
| Community centers in your neighborhood | 14 (11-17) | 10 (6-15) | 15 (12-20) |
| Travel websites, such as AAA, Travelocity, or The Points Guy | 9 (7-12) | 8 (5-12) | 10 (7-14) |

^aWeighted percentages reflect the use of survey weights to match known population parameters for the adult US population. Percentages may not sum to 100% due to rounding, refusals, and responses of “don’t know” that are included in the total sample size, but not reported here.

^bHigh risk indicates respondents at higher risk of severe illness from COVID-19 due to being age 65 years or older or having a serious heart, lung, liver, or kidney condition; diabetes; severe obesity; or decreased immunity.

^c $P \leq .01$.

^d $P < .05$.

disease outbreaks (eg, Zika and Ebola); they suggest that travelers may have lower risk perceptions than those who stay home and lower-than-desired adherence to protective behaviors.^{32,34} When asked why they did not wear masks or social distance, respondents said these practices often felt cumbersome or unnecessary for their particular circumstances. For example, they felt that precautions were not needed outside or around friends and family. These responses indicate that most travelers do not dismiss the seriousness of the pandemic; rather, they do not appreciate the risks they are taking nor understand the best ways to stay safe. While separate efforts may be needed for pandemic deniers, these results suggest that more targeted messages about the importance of layering precautions, for example, may help the majority of travelers. Further, providing advice that is specific to the context of taking precautions with friends and family may be important. This could include reminders of how often transmission occurs within families, or how to resist peer pressure against social distancing or mask wearing in these contexts.³⁶

Second, despite their vulnerability to serious illness, high-risk travelers were no more likely than non-high-risk travelers to take the key travel precautions of mask wearing and social distancing. While there may be several explanations, our data show that core demographic differences, travel purpose, and perceptions of the pandemic response did not account for this behavior. One reasonable interpretation is that high-risk adults who travel may not consider themselves to be “sick” or “elderly.” Prior research has shown that many US adults misperceive their weight, for

example, which hampers their ability and motivation to manage it effectively.^{37,38} Similarly, high-risk adults may underestimate their risk of severe illness from COVID-19, making them less likely to take appropriate precautions. Misalignment of self-identity and underestimation of risk are challenging issues from a communications perspective, but some strategies may be effective. For example, to help high-risk adults internalize targeted public health messaging, healthcare providers may be especially effective in reaching out to this group to explain, in personally relevant ways, how age and underlying health conditions can affect risk. Prior research shows that personalized risk communication provided via telehealth can improve preventive behaviors among high-risk individuals.³⁹ Moreover, there may be a need for complementary communications strategies targeted to friends and family who can support high-risk adults in taking precautions. Previous studies have shown that social support in the form of encouragement from friends and family can greatly increase adoption of preventive behaviors.⁴⁰⁻⁴²

Third, the data suggest that while a share of travelers trust public health institutions for information on how to reduce the risk of virus transmission while traveling, substantially more travelers trust their healthcare providers. Such findings are consistent with a broad range of studies that show high levels of trust in healthcare providers—in general and during COVID-19—and the importance of provider recommendations in motivating behavior change, ranging from vaccination to medication adherence.⁴³⁻⁴⁹ Although long-term strategies to maintain and build trust

in public health institutions are important, our findings suggest that partnerships between public health and healthcare professionals can provide a more immediate path for effective communication by leveraging existing trusted relationships. In addition to mass messaging efforts, public health practitioners can support communication and outreach from providers to their patients regarding personal risk from COVID-19 with more customized materials. For example, patient portal messages may be a less burdensome way for both groups to collaborate on motivating high-risk adults to adopt travel precautions while also accommodating current trends toward online care.⁵⁰

Lastly, findings show that US adults were primarily traveling to reduce stress and see loved ones, rather than taking professionally required trips or journeying to provide caregiving. Acknowledging and even showing empathy for the need to take a break, go on vacation, and reconnect with those closest to us may be important in developing resonant education and communication strategies. Prior research on smoking cessation indicates that empathetic messages produce greater behavior change than other types of campaigns.^{51,52} The importance of taking precautions to protect loved ones may also be particularly motivating, compared with appeals focused on general altruism.^{53,54} Additionally, offering the idea that taking safety precautions can, itself, reduce stress may also increase adherence.^{55,56}

This study has several limitations. First, all data are self-reported. Although the questionnaire aimed to minimize social desirability bias, self-reported protective behaviors such as mask wearing and social distancing may be inflated, compared with observed behavior. Second, weighting the data does not completely eliminate the possibility of non-response bias stemming from the response rate. If people who respond to surveys are more likely to adhere to public health recommendations, this would again inflate reported protective behaviors, although we do not expect nonresponse to differentially affect comparisons between risk groups due to the randomized design. These limitations suggest that the findings in this study may indicate a high-water mark of behavioral response, which serves to underscore the importance of effective public engagement and communications. Although we controlled for key demographic and attitudinal differences, the lack of behavioral contrast between high-risk and non-high-risk travelers may have been confounded by variables we could not measure, such as partisanship. Finally, this survey was fielded during the summer of 2020. Attitudes and behaviors around travel may have changed since then, influenced by changing case counts, less restrictive travel policies, and vaccine availability. Several of these factors may encourage travel, however, despite the spread of new variants. Thus, these findings remain not only relevant but all the more important for the summer of 2021 and beyond. Other factors, including public health messaging and the media environment, may have also shifted attitudes and beliefs, although some sentiments, including the desire to reduce stress, seem unlikely

to have changed and may have grown stronger after more than a year of pandemic-related restrictions. In fact, trust levels in healthcare providers and public health institutions for COVID-19 information has remained fairly consistent in the general population throughout the pandemic.⁵⁷⁻⁶³

CONCLUSION

Findings from this study emphasize the importance of communications about travel-related COVID-19 precautions, particularly among those at higher risk for severe illness. Until vaccine protection against novel coronavirus strains is well understood and vaccine coverage rates reach the level required for herd immunity, this population will remain vulnerable to adverse health outcomes. Public health outreach should emphasize the effectiveness of preventive measures like mask wearing and social distancing and the particular benefits of layering protective behaviors. Empathy about the need to reduce stress and the desire to be with family may be especially helpful in such efforts. Findings further suggest an opportunity for public health agencies to partner with providers in creating targeted messages for those at highest risk, as a complement to mass communication efforts. These findings have particular relevance for summer travel and future seasons—particularly those with school breaks—when vacation-style travel may occur.

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